

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A printing method carried out by a printing device for receiving data from a plurality of data source apparatuses and then printing said data, said method comprising ~~the steps~~operations of:

receiving a connection request from a first data source apparatus and establishing a logical connection with said first data source apparatus;

receiving a connection request from a second data source apparatus; ~~and~~

initially setting the role of said printing device as a communication slave ~~initially~~ while a connection is established with said first data source apparatus, and then switching the role of said printing device from a communication slave to a communication master to enable a connection to be established with both said first and second data source apparatuses;

receiving data from said first and second data source apparatuses while the connections are ~~also~~ established with said first and second data source apparatuses;

processing and printing said data received from said first data source apparatus and said second data source apparatus.

2. (currently amended): The printing method according to claim 1, further comprising ~~the step~~an operation in which, ~~when-if~~ a logical connection is established with said second data source apparatus and data are received from said second data source apparatus while a

connection is ~~also~~ established with said first data source apparatus and data received from said first data source apparatus are being transferred to a first data processing portion, from among a plurality of data processing portions for processing data received from said data source apparatuses, then said received data are stored temporarily in a buffer, and

~~whenif~~ said data can be transferred to a second data processing portion, then said data are read from said buffer and transferred to said second data processing portion.

3. (currently amended): The printing method according to claim 1, further comprising ~~the step~~ an operation in which, ~~whenif~~ a logical connection is established with said second data source apparatus and a command or data are received from said second data source apparatus while a logical connection is ~~also~~ established with said first data source apparatus and data received from said first data source apparatus are being transferred to a first data processing portion, from among a plurality of data processing portions for processing data received from said data source apparatuses, then transmission of a response signal to said second data source apparatus is delayed, and

~~whenif~~ the data received from said second data source apparatus can be transferred to a second data processing portion, then said response signal is transferred to said second data source apparatus.

4. (currently amended): The printing method according to claim 1, further comprising ~~the step~~ an operation in which, ~~whenif~~ a logical connection is established with said second data source apparatus and a request for notification of a credit value indicating the data size of the

receivable data is received from said second data source apparatus while a logical connection is also-established with said first data source apparatus and data received from said first data source apparatus are being transferred to a first data processing portion, from among a plurality of data processing portions for processing data received from said data source apparatuses, then said second data source apparatus is informed of said credit value in response to said notification request, and thus data are received from said second data source apparatus, stored temporarily in a buffer, and

~~whenif~~ said data can be transferred to a second data processing portion, then said data are read from said buffer and transferred to said second data processing portion.

5. (currently amended): The printing method according to claim 4, wherein a credit value indicating zero is transmitted back to said second data source apparatus in said transfer ~~stepoperation~~ whenif an empty region, having a size which is equal to or greater than said credit value, cannot be retained in said buffer upon reception of said credit value notification request from said second data source apparatus.

6. (currently amended): The printing method according to claim 2 or 3, wherein a logical connection is established with said first and second data source apparatuses in accordance with Bluetooth specifications in said connection ~~stepoperation~~, and wherein a profile provided on an upper Object Exchange Protocol (OBEX) level is executed in at least one of said transfer ~~stepoperation~~ and said transmitting back ~~stepoperation~~.

7. (currently amended): The printing method according to claim 6, wherein said profile is at least one of a Basic Printing Profile (BPP) and a Basic Imaging Profile (BIP).

8. (currently amended): The printing method according to claim 4, wherein a logical connection is established with said first and second data source apparatus ~~apparatus~~ in accordance with Bluetooth specifications in said connection ~~step~~operation, and wherein Hardcopy Cable Replacement Profile (HCRP) is performed in said transfer step~~operation~~.

9. (currently amended): A printing device for receiving data from a plurality of data source apparatuses, said device comprising:
a connection component configured to receive~~receiving~~ connection requests from said data source apparatuses, ~~establishing~~establish a logical ~~connections~~connection with each of said data source apparatuses, and ~~receiving~~receive data from said data source apparatuses; and
a role setting component configured to set~~settings~~ ~~the~~ role of the printing device to one of either a communication slave or a communication master, when~~if~~ said connection component receives connection requests from said data source apparatuses,
wherein said role setting component initially sets the role of the printing device as a communication slave ~~initially~~ ~~whenif said connection component receives said a connection request from a second data source apparatus while logically connected to said first data source apparatus, and then ~~switch~~switches the role of the printing device from a communication slave to~~

a communication master to enable said connection component to establish a logical connection with both said first and second data source apparatuses.

10. (currently amended): A computer readable storage medium storing a -computer program which may be installed in a device for receiving data from a plurality of data source apparatuses, said device comprising:

a connection component receiving connection requests from said data source apparatuses, establishing connections with said data source apparatuses, and receiving data from said data source apparatuses;

a role setting component setting ~~the~~a role of the printing device to one of either a communication slave or a communication master, whenif said connection component receives a connection request from each of said data source ~~apparatus~~apparatuses;

a plurality of data processing portions for processing data received by said connection component from said data source apparatuses; and

a buffer for storing said received data temporarily,

wherein said role setting component initially sets the role of the printing device as a communication slave ~~initially whenif~~ said connection component receives said connection request from a second data source apparatus while connected to a first data source apparatus, and then switches~~switch~~ the role of the device from a communication slave to a communication master to enable said connection component to establish a connection with both said first and second data source apparatuses,

wherein said computer program ~~causing causes~~ a computer to execute:

a ~~step~~an operation of transferring data received from said first data source apparatus by said connection component ~~when said connection component is connected to said first data source apparatus to~~ a first data processing portion, from among said plurality of data processing portions, if said connection component is connected to said first data source apparatus;

a ~~step~~an operation in which, ~~when~~if said connection component is connected to said second data source apparatus and data are received from said second data source apparatus by said connection component while data received by said connection component from said first data source apparatus are being transferred to said first data processing portion, then said data are stored temporarily in said buffer; and

a ~~step~~an operation in which, ~~when~~if the data received from said second data source apparatus can be transferred to said second data processing portion, then said data are read from said buffer and transferred to said second data processing portion.

11. (currently amended): A computer readable storage medium storing a computer program which may be installed in a device for receiving data from a plurality of data source apparatuses, said device comprising:

a connection component receiving connection requests from said data source apparatuses, establishing a connection with each of said data source apparatus, and receiving data from said data source apparatuses;

~~a~~ role setting component setting ~~the~~ role of the printing device to one of either a communication slave or a communication master, ~~whenif~~ said connection component receives a connection request from each of said data source ~~apparatus~~~~apparatuses~~; and

a plurality of data processing portions for processing data received by said connection component from said data source apparatuses,

wherein said role setting component sets the role of the printing device as a communication slave initially, ~~whenif~~ said connection component receives said connection request from a second data source apparatus while connected to a first data source apparatus, and then ~~after~~~~alters~~ the role of the device from a communication slave to a communication master to enable said connection component to establish a connection with both said first and second data source apparatuses,

~~wherein~~ said computer program ~~causing~~~~causes~~ a computer to execute:

~~a step~~~~an operation~~ of transmitting a response signal back to said first data source apparatus in response to reception of a command or data from said first data source apparatus, ~~whenif~~ said connection component is connected to said first data source apparatus;

~~a step~~~~an operation~~ of receiving data from said data source apparatus in response to said response signal, and transferring said received data to a first data processing portion, ~~among~~ said plurality of data processing portions;

~~a step~~~~an operation~~ in which, ~~whenif~~ said connection component is connected to said second data source apparatus and a command or data are received from said second data source apparatus while data received from said first data source apparatus are being transferred

to said first data processing portion, then transmission of a response signal back to said second data source apparatus in response thereto is delayed; and

~~a step~~an operation in which, ~~when~~if the data received from said second data source apparatus can be transferred to a second data processing portion, then said delayed response signal is transmitted back to said second data source apparatus.

12. (currently amended): A computer readable storage medium storing a computer program which may be installed in a device for receiving data from a plurality of data source apparatuses, said device comprising:

a connection component receiving connection requests from said data source apparatuses, establishing a connection with each of said data source apparatus, and receiving data from said data source apparatuses;

a role setting component setting ~~the~~a role of the printing device to one of either a communication slave or a communication master, ~~when~~if said connection component receives a connection request from each of said data source ~~apparatus~~apparatuses;

a buffer for storing said received data temporarily; and

a plurality of data processing portions for processing data received by said connection component from said data source apparatuses,

wherein said role setting component initially sets the role of the printing device as a communication slave, ~~initially when~~if said connection component receives said connection request from a second data source apparatus while connected to said first data source apparatus, and then ~~switch~~switches the role of the device from a communication slave to a communication

master to enable said connection component to establish a connection with both said first and second data source apparatuses,

~~wherein said computer program causing causes~~ a computer to execute:

a ~~step~~an operation in which, ~~when~~if a request for notification of a credit value indicating the data size of the data that can be received by said printing device is received from said data source apparatus, then said first data source apparatus is informed of said credit value in response to said notification request;

a ~~step~~an operation of receiving data of a size which ~~equals or falls below~~is less than or equal to said credit value from said first data source apparatus, and transferring said received data to a first data processing portion, from among said plurality of data processing portions;

a ~~step~~an operation in which, ~~when~~if said connection component ~~are~~is connected to said second data source apparatus and a request for notification of said credit value is received from said second data source apparatus while said connection component is ~~also~~-transferring data received from said first data source apparatus to said first data processing portion, then said second data source apparatus is notified of said credit value in response to said notification request, whereupon data are received from said second data source apparatus, and the received data are stored temporarily in said buffer; and

a ~~step~~an operation in which, ~~when~~if the data received from said second data source apparatus can be transferred to a second data processing portion, then said data are read from said buffer and transferred to said second data processing portion.

13. (new): The printing method according to claim 1, further comprising an operation in which, if a logical connection is established with said second data source apparatus and data are received from said second data source apparatus while a connection is established with said first data source apparatus and data received from said first data source apparatus are being transferred to a first data processing portion, from among a plurality of data processing portions for processing data received from said data source apparatuses, then said received data are stored temporarily in a buffer, and

if said data can be transferred to a second data processing portion, then said data are read from said buffer and transferred to said second data processing portion,

wherein a logical connection is established with said first and second data source apparatuses in accordance with Bluetooth specifications in said connection operation,

wherein a profile provided on an upper Object Exchange Protocol (OBEX) level is executed in at least one of said transfer operation and said transmitting back operation,

wherein said profile is at least one of a Basic Printing Profile (BPP) and a Basic Imaging Profile (BIP),

wherein if at least one of said BBP and said BIP receives a job preparation request from said second data source apparatus in a case where a first data transfer channel corresponding to said first data source apparatus is open, then said at least one of said BBP and said BIP executes operations comprising:

requesting a stream pipe interface portion to open a second data transfer channel corresponding to said second data source apparatus;

transmitting to said second data source apparatus, in response to said request to open said second data transfer channel, a reception possible signal, even if a notice of open error is returned from said stream pipe interface portion;

receiving data from said second data source apparatus;

temporarily storing said data received from said second data source apparatus in said buffer; and

if said second data transfer channel is opened, reading out said stored data from said buffer and transferring said stored data to said second data processing portion through said second data transfer channel,

wherein said reception possible signal is identical to a signal indicating that said second data transfer channel is open;

wherein said stream pipe interface portion comprises an interface of a stream pipe for forming a plurality of data transfer channels to a plurality of data processing portions,

wherein stream pipe interface portion serves to open one of said plurality of data transfer channels and to close all others of said plurality of data transfer channels, and

wherein, if a requested one of said plurality of data transfer channels is closed, a request to open said requested data transfer channel is received from a profile, which is capable of connecting with said requested data transfer channel, and if data is not being transmitted over another open one of said plurality of data transfer channels, then said stream pipe interface portion opens said requested data transfer channel and closes all others of said plurality of data transfer channels, and thus enables data to be transferred over said open requested data transfer channel.

14. (new): The printing method according to claim 13, wherein, if available space in said buffer is smaller than a data size of said received data, then said at least one of said BPP and said BIP delays transmission of said reception possible to said second data source apparatus until available space in said buffer equals or exceeds said data size of said received data, and wherein, if available space in said buffer equals or exceeds said data size of said received data, then said at least one of said BPP and said BIP transmits said reception possible signal to said second data source apparatus.

15. (new): The printing method according to claim 1, further comprising an operation in which, if a logical connection is established with said second data source apparatus and a command or data are received from said second data source apparatus while a logical connection is established with said first data source apparatus and data received from said first data source apparatus are being transferred to a first data processing portion, from among a plurality of data processing portions for processing data received from said data source apparatuses, then transmission of a response signal to said second data source apparatus is delayed, and if the data received from said second data source apparatus can be transferred to a second data processing portion, then said response signal is transferred to said second data source apparatus,

wherein a logical connection is established with said first and second data source apparatuses in accordance with Bluetooth specifications in said connection operation,

wherein a profile provided on an upper Object Exchange Protocol (OBEX) level is executed in at least one of said transfer operation and said transmitting back operation,

wherein said profile is at least one of a Basic Printing Profile (BPP) and a Basic Imaging Profile (BIP),

wherein, if said BPP receives a command or data from said second data source apparatus, in a case where a first data transfer channel corresponding to said first data source apparatus is open, then said BBP executes operations comprising:

requesting a stream pipe interface portion to open a second data transfer channel corresponding to said second data source apparatus;

in response to said request to open said second data transfer channel, if a notice of open error is returned from said stream pipe interface portion, then delaying transmission of a response signal to said second data source apparatus; and

if the second data transfer channel is opened, transmitting the response signal to the second data source apparatus;

wherein said stream pipe interface portion comprises an interface of a stream pipe for forming a plurality of data transfer channels to a plurality of data processing portions,

wherein stream pipe interface portion serves to open one of said plurality of data transfer channels and to close all others of said plurality of data transfer channels, and

wherein, if a requested one of said plurality of data transfer channels is closed, a request to open said requested data transfer channel is received from a profile, which is capable of connecting with said requested data transfer channel, and if data is not being transmitted over another open one of said plurality of data transfer channels, then said stream pipe interface

portion opens said requested data transfer channel and closes all others of said plurality of data transfer channels, and thus enables data to be transferred over said open requested data transfer channel.

16. (new): The printing method according to claim 1, further comprising an operation in which, if a logical connection is established with said second data source apparatus and a request for notification of a credit value indicating the data size of the receivable data is received from said second data source apparatus while a logical connection is established with said first data source apparatus and data received from said first data source apparatus are being transferred to a first data processing portion, from among a plurality of data processing portions for processing data received from said data source apparatuses, then said second data source apparatus is informed of said credit value in response to said notification request, and thus data are received from said second data source apparatus, stored temporarily in a buffer, and

if said data can be transferred to a second data processing portion, then said data are read from said buffer and transferred to said second data processing portion,

wherein a logical connection is established with said first and second data source apparatuses in accordance with Bluetooth specifications in said connection operation,

wherein a profile provided on an upper Object Exchange Protocol (OBEX) level is executed in at least one of said transfer operation and said transmitting back operation,

wherein said profile is at least one of a Basic Printing Profile (BPP) and a Basic Imaging Profile (BIP),

wherein in a case where a first data transfer channel corresponding to the first data source apparatus is open, and if a Hardcopy Cable Replacement Profile (HCRP) requests a stream pipe interface portion to open a second data transfer channel corresponding to the second data source apparatus, and in response to said request to open said second data transfer channel, receives a notice request of a credit value from said second data source apparatus after a notice of open error is returned from said stream pipe interface portion, then:

even if a notice of open error is returned, after said credit value is notified to said second data source apparatus in response to said notice request, then said HCRP receives data from said second data source apparatus;

if said HCRP is notified of said credit value of said second data source apparatus, then said HCRP requests said stream pipe interface portion to open said second data transfer channel;

in response to said request of said stream pipe interface portion to open said second data transfer channel, if a notice of open error is returned from said stream pipe interface portion, then said HCRP temporarily stores data in said buffer; and

if said second data transfer channel is opened, then HCRP reads out said data from said buffer and transfers said data from said buffer to said second data processing portion through said second data transfer channel;

wherein said stream pipe interface portion comprises an interface of a stream pipe for forming a plurality of data transfer channels to a plurality of data processing portions,

wherein stream pipe interface portion serves to open one of said plurality of data transfer channels and to close all others of said plurality of data transfer channels, and

wherein, if a requested one of said plurality of data transfer channels is closed, a request to open said requested data transfer channel is received from a profile, which is capable of connecting with said requested data transfer channel, and if data is not being transmitted over another open one of said plurality of data transfer channels, then said stream pipe interface portion opens said requested data transfer channel and closes all others of said plurality of data transfer channels, and thus enables data to be transferred over said open requested data transfer channel.

17. (new): The printing method according to claim 16, wherein said HCRP transmits back a credit value indicating zero to said second data source apparatus in said transfer operation if said HCRP cannot retain an empty region having a size which is equal to or greater than said credit value in said buffer upon reception of said credit value notification request from said second data source apparatus.